



Exception Handling Part - I

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Objectives

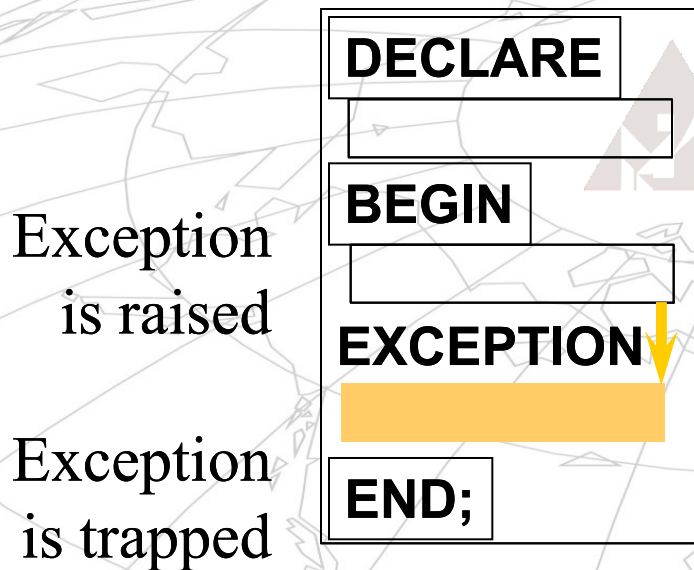
- **Define PL/SQL exceptions**
- **Recognize unhandled exceptions**
- **List and use different types of PL/SQL exception handlers**
- **Trap unanticipated errors**
- **Describe the effect of exception propagation in nested blocks**
- **Customize PL/SQL exception messages**

Exception Handling with PL/SQL

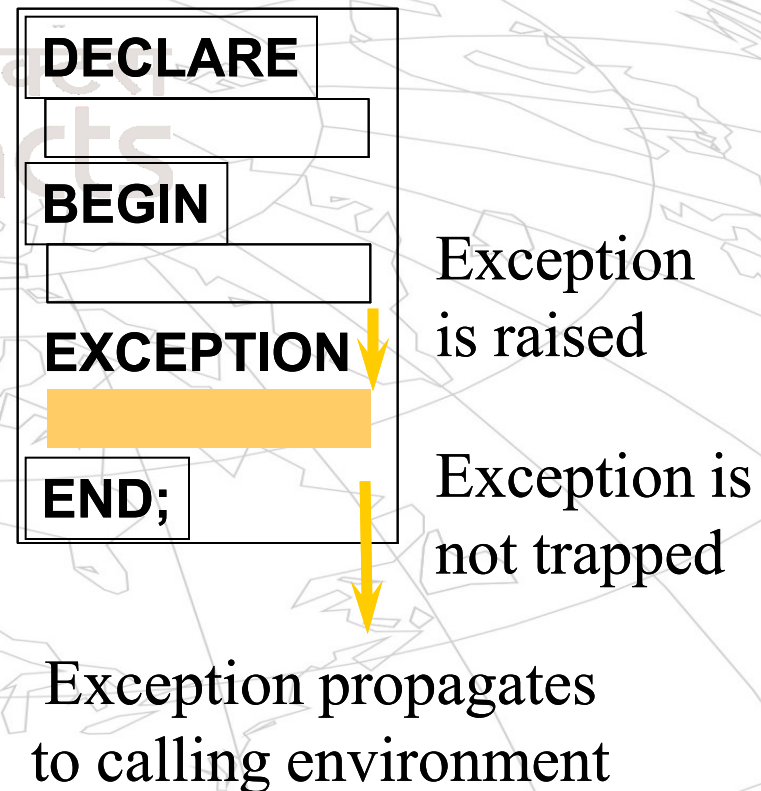
- **What is an exception?**
Identifier in PL/SQL that is raised during execution
- **How is it raised?**
 - **An Oracle error occurs.**
 - **You raise it explicitly.**
- **How do you handle it?**
 - **Trap it with a handler.**
 - **Propagate it to the calling environment.**

Handling Exceptions

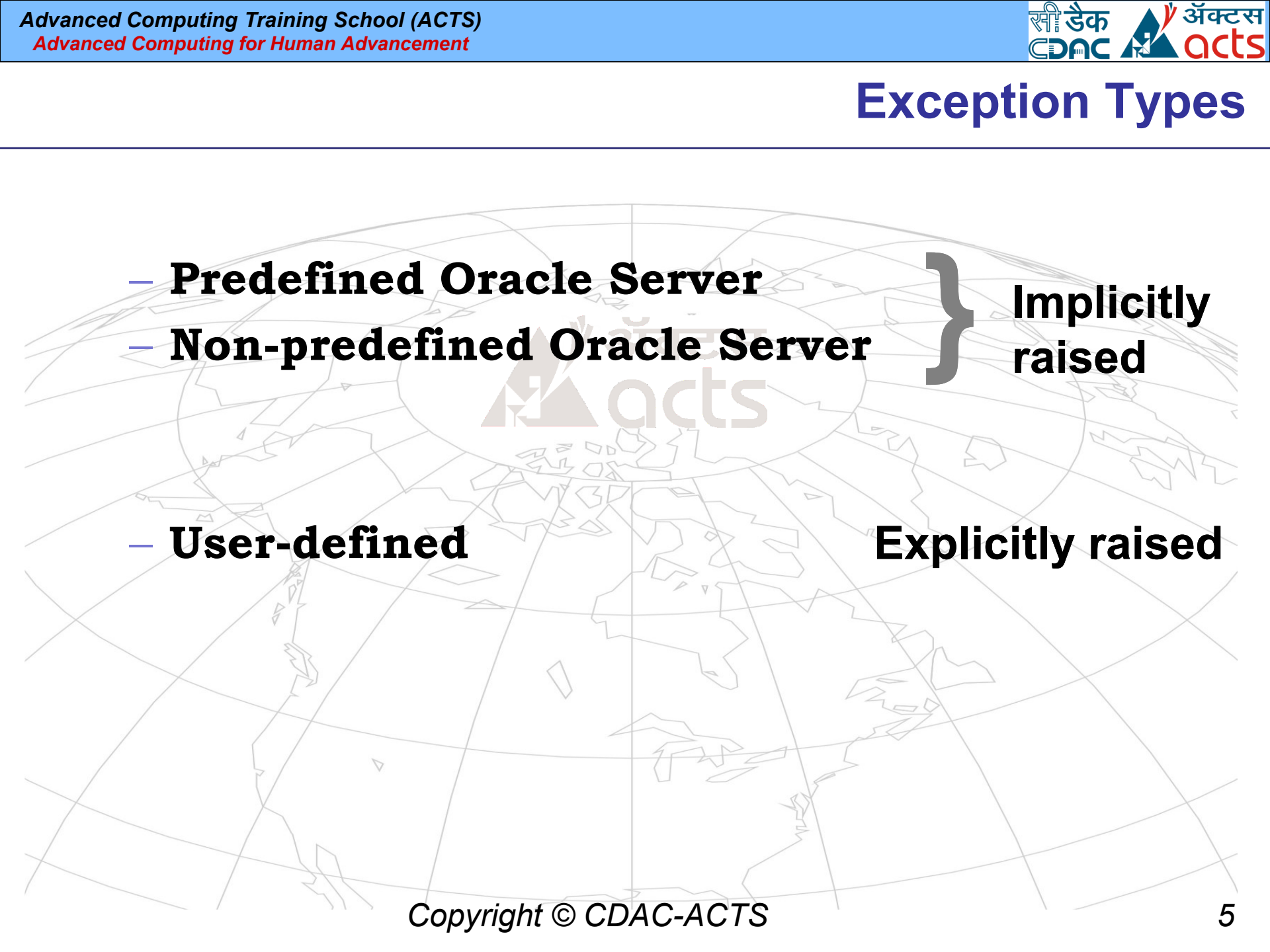
Trap the exception



Propagate the exception



Exception Types

- 
- **Predefined Oracle Server**
 - **Non-predefined Oracle Server**
- } **Implicitly raised**
-
- **User-defined**
- Explicitly raised**

Trapping Exceptions

- Syntax – Exception Handler Section**

EXCEPTION

WHEN *exception1* [OR *exception2* . . .] THEN

***statement1*;**

***statement2*;**

. . .

[WHEN *exception3* [OR *exception4* . . .] THEN

***statement1*;**

***statement2*;**

. . .]

[WHEN OTHERS THEN

***statement1*;**

***statement2*;**

. . .]

Trapping Exceptions Guidelines

- **WHEN OTHERS is the last clause.**
- **EXCEPTION keyword starts exception-handling section.**
- **Several exception handlers are allowed.**
- **Only one handler is processed before leaving the block.**

Trapping Predefined Oracle Server Errors

- **Reference the standard name in the exception-handling routine.**
- **Sample predefined exceptions:**
 - **NO_DATA_FOUND**
 - **TOO_MANY_ROWS**
 - **INVALID_CURSOR**
 - **ZERO_DIVIDE**
 - **DUP_VAL_ON_INDEX**

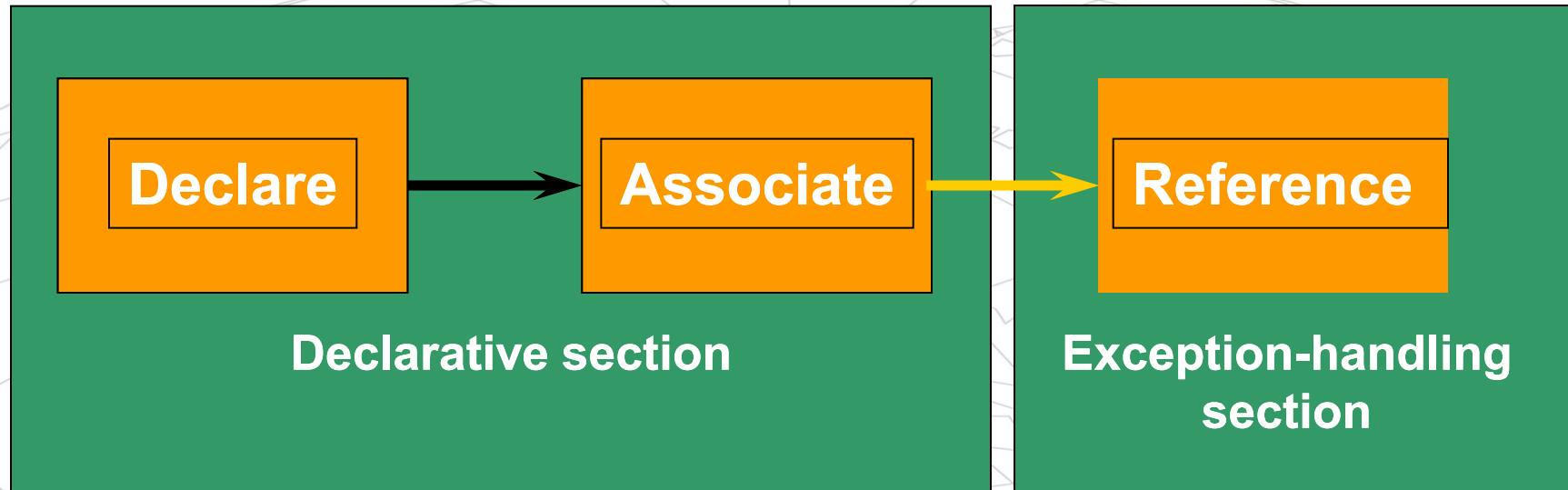
Predefined Exception

- Syntax

```
BEGIN
EXCEPTION
  WHEN NO_DATA_FOUND THEN
    statement1;
    statement2;

  WHEN TOO_MANY_ROWS THEN
    statement1;
  WHEN OTHERS THEN
    statement1;
    statement2;
    statement3;
END;
```

Trapping Non-Predefined Oracle Server Errors



- **Name the exception**
- **Code the PRAGMA EXCEPTION_INIT**
- **Handle the raised exception**

Non-Predefined Error

- **Trap for Oracle Server error number -2292, an integrity constraint violation.**

```
DECLARE
  e_emps_remaining EXCEPTION;
  PRAGMA EXCEPTION_INIT (
    e_emps_remaining, -2292);
  v_deptno      dept.deptno%TYPE := &p_deptno;
BEGIN
  DELETE FROM dept
  WHERE      deptno = v_deptno;
  COMMIT;
EXCEPTION e_emps_remaining
  WHEN e_emps_remaining THEN
    DBMS_OUTPUT.PUT_LINE ('Cannot remove dept ' ||
      TO_CHAR(v_deptno) || '. Employees exist. ');
END;
```

1

2

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Summary

- **Exception types:**
 - **Predefined Oracle Server error**
 - **Non-predefined Oracle Server error**
- **Exception trapping**
- **Exception handling:**
 - **Trap the exception within the PL/SQL block.**
 - **Propagate the exception.**



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Thank You !